Assignment Nome - Jyoli Section - CE Roll no. - 13 13 (8-17N = COST 7(n-2) = 27(n-3 for (i= 1 ton) 3 = 1+23 14-12 12 Cast 248. -. n 0= x-11 2k-1=n 1 = 10T $(K-1) \log 2 = \log n$ $K = \log 2n + 1$ Time complexity = O(log2n) T(n) = 3T(n-1) n>0 = K(K+1) . (1+1) x = T(n-1) = 3T(m-1)-1)T (n-1) = 3T (n-2) T(n) = (3T(n-2))Tm) = 9T(n-2) T(n-2) = 27 (n-8) T(n) = 2+T(n-3)T(n) = 3KT(n-k)n- K=0

n=K T(n) = 3nx1

Time complexity = 0(3")

Oy T(n) = 2T(n-1)

T(n-1) = 2T(n-2)T(n) = 4T(n-2)

T(n-2) = 2T(n-3)

T(n) = 8T(n-3)

Tin) = 2 ky (n-k)

n-k=0

T(n) = 2n . 80

Time complexity = O(2")

05 l=1 S=1

The value of i invases by 1 at each interval n = K(k+1) = K = In

T(n) = O(Jn)

06 2x=n =) 2x=5n

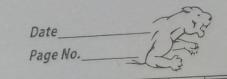
Time Comp = O(Vn) An

gt for Ist loop -> m/2

For IInd loop -> log n

For IIInd loop -> log n

Time complexity = O(n(logn)2)



n2 -> Recuronce.

T(n) = T(n-3) 10-1 T(n-3) = T(n-6)

T(n) = T(n-6) (12) side

T(n) = T(n-9)

T(n) = T(n-3k)

91-8K = 0

n = 8 k1

logn = Klog3

K = logn 3

Time complexity = 0(n3

2' notron prigited

1.(01) = (1) 2 (1) Cog 14



911) void fun (intn) int j21, i20; (8 m) While (ikn) last tem will be k(++1) = n Time complexity = O(5n) $T(n) = T(n/4) + T(n/2) + cn^2$ D14 :-Assumpting T (n/2) > T (n/4) Applying master's theorem.

 $\frac{a_{21}}{f(n) = ch^{2} \left| n \log \ell^{2} \right|}$

	Page No	
lng 2		1022A 10
As, $(n^2 > n^{\log 2})$ So, $T(n) = O(f(n))$	vailalan	Wordmich =
80, (n)= UT(n)	vlomo	at au wells
tugari ado de marina dad ai		delay identi
$= O(n^2)$	derivit.	ago top algor
		V V
1915 n+ m/2 + m/3 + m/4 +		-3 134H
nl1+1/2+1/3+1/4+		· · · · · · · · · · · · · · · · · · ·
about and ros orad south as	J Avio	000
n(logn) = nlogn	an b	Que 16
gravides any optotic lover	- 0	in the Omen
Q 16	brod	0
$N = L^{\prime}$		
V color V and	ense	ciù Theto.:-
kz logan		
	7/4	গ্ৰহাক।
O(logn) ghr		- 11 2 PM
Ol cogn) ghr	6 3 B	The down
M 18:-	bo	300
19) 100< loglogn < logn < logn	e(n1) 4	(month < n < 020
10) 100< loglogn < logn < logn < logn < logn < 2222	= 4	カイカリ
(b) 14 loglog (n)) × Tiogins ×	log (n)	Klog 2n K 2 logn
(b) 14 loglog (n)) L Trog(n) L Ln L2n Lyn < nlogn L	log (ni)	1 L Un2 L 2 (2M) < n
(C) 962 log n 2 log n 2 log (n). 8 n ² 2 7n ³ 2 8 2n-6 2 n)	(5n < 1	nlogn < nlog2n <
DELTA Notebook		Total Allaci

/

75

2101

Assymptolic notation are languages that allow us to analyze an algorithm runs time delay identifying is behaviour as the input size of algorithms.

Types: -

(i) Big 0: - It is tommonly used for worst case and give us upper bond for the growth water of unin time of algorithm

Eg = O(n)

+ we + eve + ave + a

in Big Omega: - Provides asymptotic lower

(iii) Theta: - Tight bond of the growth rate of sun-time of algo.

छाठला

Q7 Small: - 9+ is used to denote the upper

020 D

Insertion Sort:

(b) 14/10/10 (m) 2 (m) 2

subajus ubajus uss (Iu) bajs ubajs ubajs se

8115 X 3113 X 8 211 8 X 11 1 1

DELTA Notebook

	Page No.
i) insortion Sort by iterative, wo	y:- 3 9 win x 111.9% 118
Void Insertion Sort (int int î, temp, j;	our [], int n)
for (it-1 ton)?	while (j.
tempt aveli]	3
Ĵ < ' ¿- 1 ;	AND our Gig > temp)
€ 200/=13+13+13+	
1- in the less (a, i+1 , n);	,
3 our[j+1] ← +	em þ;
sitots mangle every de	Q10: Since polynomia
(11) By Rewo . Com 1000 to	produced board